



Known Good Die

SPECIFICATIONS

	Symbol	Min.	Typical	Max.	Unit	Test condition
Emission Wavelength	λ	840	850	860	nm	$I_{OP} = 6\text{mA}$
Threshold current	I_{th}	0.5	1	1.5	mA	Temp = 25°C
Operating voltage	V_{OP}	1.8	1.9	2.2	V	
Slope efficiency	η_s	0.3	0.4	0.5	W/A	Temp = 25°C
Differential resistance	R_d	45	60	75	Ω	Temp = 25°C, $I_{OP} = 6\text{mA}$
Operating power	P_{OP}	1	1.5		mW	Temp = 25°C, $I_{OP} = 6\text{mA}$
Beam divergence (FWHM)	θ		20		deg	$I_{OP} = 6\text{mA}$
Spectral bandwidth (RMS)	$\Delta\lambda_{RMS}$		0.4	0.65	nm	Temp = 25°C, $I_{OP} = 6\text{mA}$
3dB modulation bandwidth	f_{3dB}		7.5		GHz	$I_{OP} = 6\text{mA}$
Rise and fall time	t_R/t_F 20/80		45	55	ps	$I_{OP} = 6\text{mA}$
Relative intensity noise	RIN		-128		dB/Hz	
Wavelength tuning over current			0.3		nm/mA	
Wavelength tuning over temp			0.07		nm/K	
Thermal impedance	$Z_{Thermal}$		2		°C/mW	

ABSOLUTE MAXIMUM RATING

	Symbol	Min.	Typical	Max.	Unit
Optical output power	P_{max}			8	mW
Peak forward current	I_f			16	mA
VCSEL reverse voltage	V_{rv}			8	V
Operating temperature	T_{OP}	-5		85	°C
Storage Temperature	T_{st}			100	°C

UNIFORMITY OF ARRAY PRODUCTS

	Symbol	Min.	Typical	Max.	Unit
Threshold current	ΔI_{th}			0.15	mA
Slope efficiency	$\Delta\eta_s$			0.1	W/A
Series resistance	R_s			8	%

About GCS:

GCS is a world-class semiconductor manufacturer specializing in advanced photodiode technologies. We provide advanced GaAs and InGaAs photodiodes of varying data rate and application to multiple top tier optical transceiver customers throughout the world. With over 15 years' experience and over 150 million units delivered, our state of the art manufacturing facility has the capacity to produce 2,000 (100mm) wafers per month.

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